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Joseph R Burwell
Law Office of Joseph R Burwell
P O Box 28022
Austin, TX 78755-8022

EXAMINER	
WILSON, ROBERT W	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/657,119	CONNER ET AL.	
	Examiner	Art Unit	
	Robert W Wilson	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-89* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-89* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

1.0 The application of Conner et. al. entitled "METHOD AND APPARATUS FOR PERFORMING A STABLE HASH-BASED MAPPING COMPUTATION IN CONSTANT TIME OVER A DYNAMICALLY VARYING TARGET SET OF COMPUTATIONAL RESOURCES" which was filed on 9/7/2000 without priority and amended on 10/29/2004. Claims 1-89 are pending.

2.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.0 **Claims 1-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Munter et. al.

(U.S. Patent No.: 6,243,720 B1)

Referring to **Claim 1**, Munter teaches: router (routing product or router per col. 1 line 26);
computer readable medium (routing table per col.1 line 34);
plurality of links (link per col. 1 line 26);

retrieving means (Routing product receives the destination address or retrieving means per col. 1 lines 19-40);

hashing means for hashing the destination address to determine a table index into a table (IP DA or destination address is utilized in a hashing function or hashing means per col. 2 line 44-67)

Reading means for reading a target address from a table entry using the table index (The network address associated with the next hop or target address is read from the table utilizing a index associated with a hash function in order to determine the location of the next hop or reading means per col. 1 lines 50-54)

wherein the target address has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target address as operands in the relation computation (The applicant broadly claims that the target address is determined based upon a relationship between the target address and index. The examiner interprets the relation that the target address is the next hop network address which the reference teaches is determined from the table per col. 1 line 12-col. 3 line 52)

modifying means for modifying the data packet by storing the target address in the data packet as a next–hop destination address (The next hop address is determined based upon the hashing function which outputs a index or target address which maps to the next hop address which is utilized to send the packet to the next hop per col. 1 line 12-col. 3 line 52. The reference teaches that the packet is forwarded to the next output link per col. 1 lines 50-54 which inherently means that the data packet is modified to have the next target address or modifying means)

Munter does not expressly call for: a computer readable medium but teaches a routing table per col. 1 line 34.

It would have been obvious to one of ordinary skill in the art at the time of the invention that a routing table is implemented in software which must be stored on a computer readable medium in order for the invention to work.

In Addition Munter teaches:

Regarding **Claims 2,** further comprising relating means for relating a particular table entry to a target address (equivalent hash value or index relates the DA address to the next hop address per col. 1 line 12-col. 3 line 52 or relating means.)

Generating means for generating, for each target address in the set of target address (equivalent hash value or index relates the DA address to the next hop address per col. 1 line 12-col. 3 line 52 or generating means for the next target address)

a computed value using the table index for a particular table entry and to a target address as operands in the relation computation to obtain a set of computed values (The equivalent hash value is computed from the DA address in order to determine the next hop address or target address per equivalent hash value or index relates the DA address to the next hop address per col. 1 line 12-col. 3 line 52.)

Regarding **Claim 3**, further comprising:

Obtaining means for obtaining a set of target address (Means for obtaining the next hop address or target address per equivalent hash value or index relates the DA address to the next hop address per col. 1 line 12-col. 3 line 52.)

Relating means for relating, for each table entry, a target address from the set of target address to a table entry such that each table entry is related with
one and only target address (The DA address is hashed in order to determine an equivalent hash value which points to the next hop address or target address per col. 1 line 12-col. 3 line 52. This provides a one for one correspondence)

Referring to **Claim 4**, Munter teaches teaches: A routing method in a data processing system (routing product per col. 1 line 19-col. 3 line 52)

receiving a packet (receives a packet with IP DA per col. 1 line 19-col. 3 line 52.);

retrieving the destination address from the data packet (IP DA used as a key in a hashing function consequently the destination address is retrieved from the data packet per col. 1 line 19-col. 3 line 52);

hashing the destination address to determine a table index into a table in a computer readable medium (IP DA utilized in a hashing function per col. 2 line 44-67. It would have been obvious to one of ordinary skill in the art at the time of the invention that a tables are implemented in software which is stored on a computer readable medium in order for the invention to work)

reading a target address from a table entry using the table index (The network address associated with the next hop or target address is read from the table utilizing a index associated with a hash function in order to determine the location of the next hop per col. 1 lines 50-54),

wherein the target address has been related to the stored in the table entry based on a computed value from a relation computation using the table index and the target address as operands in the relation computation (The examiner interprets this to mean that the next hop address is determined based upon hashing of the destination address in which a equivalent hash value is determined per col. 1 line 19-col. 3 line 52)

modifying the data packet as a next-hop destination address (The next hop address is determined based upon the hashing function which outputs a index or target address which maps to the next hop address and is utilized to modify the packet per col. 1 line 19-col. 2 line 52. The reference teaches that the packet is forwarded to the next output link per col. 1 lines 50-54. Forwarding of the data packet to the next hop inherently means that the data packet is modified to have the next target address in order for the packet to get to the destination.)

transmitting the modified packet (The packet is transmitted to the next link per col.1 lines 50-54)

Munter does not expressly call for: a computer readable medium but teaches a routing table per col. 1 line 34.

It would have been obvious to one of ordinary skill in the art at the time of the invention that a routing table is implemented in software which must be stored on a computer readable medium in order for the invention to work.

In Addition Munter teaches:

Regarding **Claims 5** further comprising a step for relating a particular table entry to a target address (Each next hop address or target address is related to a particular table entry per col. 1 line 19-col. 3 line 52.)

for each target address in the set of target address (for each next hop address per col. 1 line 19-col. 3 line 52.)

generating a computed value using the table index for the particular entry and a target address as operands in the relation computation to obtain a set of computed values (The DA address is hashed in order to create a equivalent hash value per col. 1 line 19-col. 3 line 52.)

choosing a computed value based upon a mathematical relationship among the set of computed values (The DA address is hashed in order to create a equivalent hash value wherein the hash value addresses the next hop address via mathematical relationship per col. 1 line 19-col. 3 line 52.)

determining a related target address for the particular entry based on the chosen computed value (The equivalent has value relates to the next hop address per col. 1 line 19-col. 3 line 52.)

Regarding **Claim 6** further comprising:

Obtaining a set of target addresses (Obtaining next hop addresses or target addresses per col. 1 line 19-col. 3 line 52.)

For each table entry, relating a target address form the set of target address to a table entry such that each table entry is related with only one target address (There is a one for one correspondence to equivalent hash value and the next hop address or target address per col. 1 line 19-col. 3 line 52.)

For each table entry, storing in a table entry its related target address (The next hop addresses or target address are stored in the table per col. 1 line 19-col. 3 line 52.)

Claim Rejections - 35 USC § 103

4.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.0 **Claims 7-13, 15-24, 26-35, 37-46, 48-62, 64-78, 80-89** are rejected under 35 U.S.C. 103(a) as being unpatentable over Munter et. al. (U.S. Patent No.: 6,243,720 B1) in view of O'Connell et. al. (U.S. Patent No.: 6,661,787)

Referring to **Claim 7**, Munter teaches: A method in a data processing system for mapping a source identifier to a target identifier in a set of target identifiers (A method in a router or data processing system for mapping a DA address via hashing into a equivalent has value or target identifier per col. 1 line 19-col. 3 line 52) the method comprising the steps of:

Managing a data structure in a computer readable medium (A routing table which is software or a data structure per col. 1 line 19-col. 3 line 52. It would have been obvious to one or ordinary skill in the art at the time of the invention that the routing table is implemented in software which must be stored on a computer readable medium in order for the invention to work)

Hashing the source identifier to a location identifier of an entry in a data structure (Hashing a destination address or source identifier in order to hashing value or location identifier per col. 1 line 19-col. 3 line 52)

Munter does not expressly call for: wherein the single target identifier is related to one or more entry locations

Retrieving information associated with the target identifier from the entry in the data structure using the location identifier;

And obtaining a mapped target identifier from the retrieved information associated with the target identifier

Wherein the processing speed with which the source identifier is mapped to the mapped target identifier is independent of a total number of target identifiers in the set of target identifiers but teaches determining a next-hop address by utilizing a DA address and a hashing function per col. 1 line 19-col. 3 line 52.

O'Connell teaches:
wherein the single target identifier is related to one or more entry locations (The pointer per Fig 3 relates to associated data which could relate to a plurality of values; such as, MAC, IP ,VLAN per Fig 2)

Retrieving information associated with the target identifier from the entry in the data structure using the location identifier (The associated data per Fig 3 is retrieved based upon pointer or target identifier)

And obtaining a mapped target identifier from the retrieved information associated with the target identifier (The pointers or target identifiers per Fig 3 are mapped)

Wherein the processing speed with which the source identifier is mapped to the mapped target identifier is independent of a total number of target identifiers in the set of target identifiers (The computation or determining a target identifier is made on a individual DA or source identifier basis therefore the processing speed is independent of the total number of target identifiers)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the hashing function of O'Connell to the router of Munter in order to reduce the storage requirements in order to perform routing functions per col. 2 lines 49-54 of O'Connell.

In Addition O'Connell teaches:

Regarding **Claim 8,** wherein the method for mapping the source identifier to the target identifier is stable with respect to the changes in the set of target identifiers (The applicant broadly claims stable. The examiner interprets Fig 3 shows a stable mapping because the results are repeatable or stable)

Referring to **Claim 9,** Munter reaches a method in a data processing system for mapping a source identifier to a target identifier (A method in a router or data processing system for mapping a DA address via hashing into a equivalent has value or target identifier per col. 1 line 19-col. 3 line 52) the method comprising the steps of:

Hashing the source identifier to determine a table index into a table in a computer readable medium (Hashing a DA address or source identifier into a equivalent hashing value or target identifier in a table per col.1 line 19-col. 3 line 52. It would have been obvious to one or ordinary skill in the art at the time of the invention that the routing table is implemented in software which must be stored on a computer readable medium in order for the invention to work.)

Munter does not expressly call for:

Reading the target identifier from a table entry using the table index,

Wherein the target identifier has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target identifier as operands in the relation computation but teaches determining a next-hop address by utilizing a DA address and a hashing function per col. 1 line 19-col. 3 line 52.)

O'Connell teaches: reading a target address from a table entry using the table index (Reading a Pointer or target address which is stored in a table based upon a 15 bit index per Fig 3),

wherein the target address has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target address as operands in the relation computation (The applicant broadly claims that the target address is determined based upon a relationship between the target address and index. The examiner believes that the applicant is really trying to say that the target object is determined based upon a relationship between the target address and target index because there is no support in the specification for target address to be computed based upon a relationship between the target address and target

index. The examiner interprets the associated data or target object has been determined based a relationship between the pointer or target address and 15 bit or index.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the hashing function of O'Connell to the router of Munter in order to reduce the storage requirements in order to perform rouging per col. 2 lines 49-54 of O'Connell.

Referring to **Claim 20,** Munter teaches: An apparatus for mapping a source identifier to a target identifier (Fig 3 shows a router apparatus for mapping a DA address via hashing into a equivalent has value or target identifier per col. 1 line 19-col. 3 line 52) comprising the steps of:

First hashing means for hashing the source identifier to determine a table index into a table in a computer readable medium (Hashing a DA address or source identifier into a equivalent hashing value or target identifier in a table per col.1 line 19-col. 3 line 52. It would have been obvious to one or ordinary skill in the art at the time of the invention that the routing table is implemented in software which must be stored on a computer readable medium in order for the invention to work)

Munter does not expressly call for:

Reading means for reading the target identifier from a table entry using the table index,

Wherein the target identifier has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target identifier as operands in the relation computation but teaches determining a next-hop address by utilizing a DA address and a hashing function per col. 1 line 19-col. 3 line 52.

O'Connell teaches: reading means for reading the target address from a table entry using the table index (Reading a Pointer or target address which is stored in a table based upon a 15 bit index per Fig 3),

wherein the target address has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target address as operands in the relation computation (The applicant broadly claims that the target address is determined based upon a relationship between the target address and index. The examiner believes that the applicant is really trying to say that the target object is determined based upon a relationship between the target address and target index because there is no support in the specification for target address to be computed based upon a relationship between the target address and target index. The examiner interprets the associated data or target object has been determined based a relationship between the pointer or target address and 15 bit or index.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the hashing function of O'Connell to the router of Munter in order to reduce the storage requirements in order to perform rouging per col. 2 lines 49-54 of O'Connell.

Referring to **Claim 31**, It is within the level of one skilled in the art at the time of the invention to implement the method of Claim 20 above in hardware and software or computer program. It would have been obvious to one of ordinary skill in the art to store the software or computer program on a computer readable medium in order to make the invention work. Refer to Claim 20 rejection for more details.

Referring to **Claim 42,** Munter teaches: A method in a data processing system for mapping a source identifier to a target identifier (Fig 3 shows a router which performs the method of mapping a DA address via hashing into a equivalent has value or target identifier per col. 1 line 19-col. 3 line 52) comprising the steps of:

hashing the source identifier to determine a table index into a table in a computer readable medium (Hashing a DA address or source identifier into a equivalent hashing value or target identifier in a table per col.1 line 19-col. 3 line 52. It would have been obvious to one or ordinary skill in the art at the time of the invention that the routing table is implemented in software which must be stored on a computer readable medium in order for the invention to work.)

Munter does not expressly call for:

Reading information associated the target identifier from a table entry using the table index,

Wherein the target identifier has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target identifier as operands in the relation computation but teaches determining a next-hop address by utilizing a DA address and a hashing function per col. 1 line 19-col. 3 line 52.

O'Connell teaches: Reading information associated the target identifier from a table entry using the table index (Reading a Pointer or target address which is stored in a table based upon a 15 bit index per Fig 3 and reading information associated with the location as shown in the routing table per Fig 2)

wherein the target address has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target address as operands in the relation computation (The applicant broadly claims that the target address is determined based upon a relationship between the target address and index. The examiner believes that the applicant is really trying to say that the target object is determined based upon a relationship between the target address and target index because there is no support in the specification for target address to be computed based upon a relationship between the target address and target index. The examiner interprets the associated data or target object has been determined based a relationship between the pointer or target address and 15 bit or index.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the hashing function of O'Connell to the router of Munter in order to reduce the storage requirements in order to perform routing function per col. 2 lines 49-54 of O'Connell

Referring to **Claim 58**, It is within the level of one skilled in the art at the time of the invention to implement the method of Claim 42 as a apparatus refer to Claim 42 above for more details.

Referring to **Claim 74**, It is within the level of one skilled in the art at the time of the invention to implement the method of Claim 42 as software or instructions. It would have been obvious to one of ordinary skill in the art at the time of the invention to store the instructions on a computer readable medium so that the instructions could be executed on a processor.

In Addition O'Connell teaches:

Regarding **Claims 10, 21, 32, 43, 59, & 75,** the method, means, and instructions on a computer readable medium for

comprising a step for relating a particular table entry to a target address in which (Fig 3 shows the means for relating a 15 bit index to a pointer or target address)

for each target address in the set of target address (Fig 3 shows generating a 15 bit or table index in order to determine a pointer or target address in the set of target addresses)

generating a computed value using the table index for the particular entry and a target address as operands in the relation computation to obtain a set of computed values (Fig 3 shows computing a 15 bit table index in a relation computation)

choosing a computed value based upon a mathematical relationship among the set of computed values (The 15 bit index is chosen per Fig 3)

determining a related target address for the particular entry based on the chosen computed value (The pointer or target address is chosen based upon the 15 bit index per Fig 3)

Regarding **Claims 11, 22, 33, 44, 60, & 76**, the method, means, and instructions on a computer readable medium for further comprising:

Obtaining a set of target addresses (Obtaining pointers or target addresses per Fig 3)

For each table entry, relating a target address form the set of target address to a table entry such that each table entry is related with only one target address (There is a one for one correspondence to pointers or target addresses per Fig 3)

For each table entry, storing in a table entry its related target address (Pointer is a table entry which is a target address per Fig 3)

Regarding **Claims 12, 23, 34, 45, 61, & 77**, the method, means, and instructions on a computer readable medium for further comprising:

Dynamically removing a target identifier from a set of target identifiers to obtain a modified set of target identifiers (The examiner takes official notice that routing table updates are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention that the pointers or target identifiers would be removed as the routing table is updated per Abstract)

For each table entry previously related to the removed target identifier, newly relating a target identifier from the modified set of target identifiers to the table entry such that each table entry is related with only one target identifier (The examiner takes official notice that routing table updates are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention that the pointers or target identifiers would be removed or added as the routing table is updated per Abstract)

For each table entry previously related to the removed target identifier, storing in a table entry its newly related target identifier (The examiner takes official notice that routing table updates are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention that the pointers or target identifiers would be removed or added as the routing table is updated per Abstract)

Regarding **Claims 13, 24, 35, 46, 62, & 78**, the method, means, and instructions on a computer readable medium for further comprising:

Dynamically adding a target identifier to a set of target identifiers to obtain a modified set of target identifiers (The examiner takes official notice that routing table updates are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention that the pointers or target identifiers would be removed or added as the routing table is updated per Abstract)

For each table entry, relating a target identifier from the modified set of target identifier to a table entry such that each table entry is related with only one target identifier (The examiner takes official notice that routing table updates are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention that the pointers or target identifiers would be removed or added as the routing table is updated per Abstract)

For each table entry, storing in a table entry its related target identifier if its related target identifier differs from a target identifier previously stored in the table entry (The examiner takes official notice that routing table updates are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention that the pointers or target identifiers would be removed or added as the routing table is updated per Abstract)

Regarding **Claims 15, 26, 37, 48, 64, & 80,** the method, means, and instructions

further comprising: obtaining a set of target identifiers, wherein each target identifier identifies a computational resource such that each target identifier is related with only one computational resource. (The 15 bit index identifies a pointer or target identifier per Fig 3. The pointers are in a table or computational resource)

Regarding **Claims 16, 27, 38, 49, 65, & 81**, the method, means, and instructions on a computer readable medium

further comprising: associating a computation resource with a subset of a set of target identifiers (Table or computational resource containing pointers per Fig 3)

wherein each target identifier in the set of target identifiers is related with only one computational resource (Each pointer or target identifier relates to only one value in the table or computational resource per Fig 3)

and wherein a size of the subset of target identifiers is proportional to a computational capacity of the computational resource (A subset of points represents a subset of the table which is a computational resource per Fig 3)

Regarding **Claims 50, 66, 82**, the method, means, and instructions on a computer readable medium for retrieving the target identifier using the information associated with the target identifier (retrieve point or target identifier based upon index or associated info per Fig 3)

Performing a computational process on a computational resource identified by the target identifier (The associated data or computation resource is processed per Fig 2 & 3)

Regarding **Claims 51, 67, 83,** the method, means, and instructions on a computer readable medium for wherein the computational resource identified by the target identifier is a memory resource (The pointer or target identifier per Fig 3 is a memory resource)

Regarding **Claims 52, 68, & 84,** the method, means, and instructions on a computer readable medium for wherein the computational resource identified by the target identifier is a data processing system (The pointer or target identifier per Fig 3 is utilized in a router or data processing system)

Regarding **Claim 53, 69, 85**, the method, means, and instructions on a computer readable medium for wherein wherein the information associated with the target identifier comprise the target identifier (The Pointer or target identifier per Fig 3 points or is a target identifier for the associated data per Fig 3)

Regarding **Claim 54, 70, & 86** wherein the data structure is a table and the location identifier is a table index (table and index is used as a location identifier per Fig 3)

In Addition Munter teaches:

Regarding **Claims 17, 28, 39, 55, 71, 87** the method, means, and instructions on a computer readable medium for

wherein the source identifier is a network protocol address (IP DA per or network protocol address per col. 1 line 19-col. 2 line 67)

Regarding **Claims 18, 29, 40, 56, 72, & 88**, the method, means, and instructions on a computer readable medium

Wherein the target identifier is a network physical address (The examiner believes that the applicant means target object is a network physical address. Refer to 112/1st paragraph rejection for details. The reference teaches that the next hop address is determined. It would have been obvious to one of ordinary skill in the art at the time of the invention that the next hop address is a network physical address per col. 1 line 11-col. 3 line 52)

Regarding **Claims 19, 30, 41, 57, 73, & 89**, the method, means, and instructions on a computer readable medium

Wherein the target identifier is a uniform resource identifier (The examiner believes that the applicant means that the URL is a destination address or SID. Refer to the 112/1st paragraph rejection for details. The reference teaches that URL or destination address is utilized to determine the next hop address is determined. It would have been obvious to one of ordinary skill in the art at the time of the invention that the next hop address is a URL per col. 1 line 11-col. 3 line 52)

Claim Rejections - 35 USC § 112

6.0 The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7.0 **Claims 1-89** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant

art that the inventor(s), at the time the application was filed, had possession of the claimed

invention.

Referring to **Claims 1 & 4**, where in the specification does the applicant define the limitation "wherein the target address has been related to and stored in the table entry based on a computer value from a relation computation using the table index and the target address as operands in the relation computation"

The specification discloses that the target object can be determined based upon a computed or mathematical relationship between the target index and the target identifier or in other words target object=mathematical relation (SID, index, target id) on Pg 7 line 1-Pg 8 line 15.

The specification provides written support that the target id can be determined based upon a computed or mathematical relationship with the SID and target index or in other words target id=relation (SID, index) per Pg 2 line 20-Pg 3 line 24.

The applicant has claimed target address=mathematical relation (target address, target index) which is not defined in the specification.

Referring to **Claims 9, 20, 31, 42, 58, & 74**, where in the specification does the applicant define the limitation "wherein the target identified has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target identifier as operands in the relation computation

The specification discloses that the target object can be determined based upon a computed or mathematical relationship between the target index and the target identifier or in other words target object=mathematical relation (SID, index, target id) on Pg 7 line 1-Pg 8 line 15.

The specification discloses that the target id can be determined based upon a computed or mathematical relationship with the SID and target index or in other words target id=relation (SID, index) per Pg 2 line 20-Pg 3 line 24.

The applicant has claimed target identifier=mathematical relation (target id, table index) which is not defined in the specification.

Referring to **Claims 14, 25, 36, 47, 63, & 79**, where in the specification does the applicant define the limitation ""receiving the table index and the target identifier as operands for the relation computation; hashing the table index to generate a first has value; hashing the target identifier to generate a second has value; and hashing the first hash value and the second has value to generate a computed value"?

Referring to **Claims 18, 29, 40, 56, 72 & 88**, where in the specification does the applicant define the limitation that the target identifier is a network physical address? Does the applicant mean

that the next hop address is the network physical address in which case the applicant means that the network physical address is a target object and not a target identifier.

Referring to **Claim 19, 30, 41, 57, 73, & 89**, where in the specification does the applicant define the limitation that the target identifier is the Uniform Resource Identifier? On Page 13 line 18 the applicant specifies a requesting a URL address which implies that the address is a destination address and not a target identifier)

Referring to **Claims 54, 70, & 86,** where in the specification does the applicant define the limitation that a location identifier is a table index?

Claim Rejections - 35 USC § 112

8.0 The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9.0 **Claims 1-89** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to **Claims 1 & 4**, What is meant by the limitation "wherein the target address has been related to and stored in the table entry based on a computer value from a relation computation using the table index and the target address as operands in the relation computation"; consequently, the examiner cannot assess the metes and bounds of the claims.

Referring to **Claims 9, 20, 31, 42, 58, & 74**, What is meant by the limitation "wherein the target identified has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target identifier as operands in the relation computation"; consequently, the examiner cannot assess the metes and bounds of the claims.

Claim Objections

10.0 **Claims 1-89** are objected to because of the following informalities:

Referring to **Claims 1 & 4**, the examiner objects to the limitations "wherein the target address has been related to and stored in the table entry based on a computer value from a relation computation using the table index and the target address as operands in the relation computation; and modifying means for modifying the data packet by storing the target address in the data packet as a next –hop destination address" because this limitation is inconsistent with the specification as well as confusing.

The specification discloses that the target object can be determined based upon a computed or mathematical relationship between the target index and the target identifier or in other words target object=mathematical relation (SID, index, target id) on Pg 7 line 1-Pg 8 line 15.

The specification provides written support that the target id can be determined based upon a computed or mathematical relationship with the SID and target index or in other words target id=relation (SID, index) per Pg 2 line 20-Pg 3 line 24.

The applicant has claimed target address=mathematical relation (target address, target index) which is not defined in the specification.

The examiner suggest that the applicant change target address to target object and state that the target object is computed based upon a relationship with (SID or destination address and target index)

Referring to **Claims 9, 20, 31, 42, 58, & 74**, the examiner objects to the limitation "wherein the target identified has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target identifier as operands in the relation computation" because this limitation is confusing and is not disclosed by the specification.

The specification discloses that the target object can be determined based upon a computed or mathematical relationship between the target index and the target identifier or in other words target object=mathematical relation (SID, index, target id) on Pg 7 line 1-Pg 8 line 15.

The specification discloses that the target id can be determined based upon a computed or mathematical relationship with the SID and target index or in other words target id=relation (SID, index) per Pg 2 line 20-Pg 3 line 24.

The applicant has claimed target identifier = mathematical relation (target id, table index) which is not defined in the specification.

The examiner suggests that the applicant define the relationship for target identifier based upon SID, and target index.

Referring to **Claims 18, 29, 40, 56, 72 & 88**, the examiner objects to the limitation that the target identifier is the network physical address because it makes no sense for the target identifier under the applicant's specification definition to be a network physical address. The examiner suggests that the network physical address be defined as the target object.

Referring to **Claim 19, 30, 41, 57, 73, & 89**, the examiner objects to the limitation that the target identifier be a Uniform Resource Identifier because it makes no sense for the target identifier to be a URL under with regard to the definition of a target identifier in the applicant's specification. The examiner suggests that the URL be defined as a SID or Destination address.

Appropriate correction is required.

Response to Amendment

11.0 Applicant's arguments with respect to claims 1-89 have been considered but are moot in view of the new ground(s) of rejection.

Refer to the above rejection for details.

Conclusion

12.0 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571/272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert W. Wilson

Robert W Wilson
Examiner
Art Unit 2661

RWW
November 29, 2004

KENNETH VANDERPUYE
PRIMARY EXAMINER